

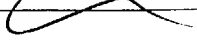


UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/390,289	09/03/1999	JEFFREY S. DUGAN	709.36924X00	6666
20457	7590	04/12/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			BEFUMO, JENNA LEIGH	
			ART UNIT	PAPER NUMBER
			1771	
DATE MAILED: 04/12/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s) 	
	09/390,289	DUGAN ET AL.	
	Examiner	Art Unit	
	Jenna-Leigh Befumo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9,11-21,24-30,62,64-69 and 72-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 81 is/are allowed.
- 6) ☒ Claim(s) 9,11-21,24-30,62,64-69,72-80 and 82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Amendment submitted on January 16, 2004, has been entered. Claims 1 – 8, 10, 22 – 23, 31 – 61, 63, 70, and 71 have been cancelled. Claims 9, 30, 67, and 77 have been amended and claim 82 has been added. Therefore, the pending claims are 9, 11 – 21, 24 – 30, 62, 64 – 69, and 72 – 82.
2. The 35 USC 102 rejection based on Hwang (4,514,455) is withdrawn since the binder would not be substantially only at the intersection where the first fiber segments cross each other, since Hwang discloses using a binder material to bond together two different types of fibers. Hence, the binder material would be at the intersections of the first fiber type with each other, intersections of the first fiber type with the second fiber type, and intersections of the second fiber type with each other. However, new grounds of rejection have been set forth below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 9, 11 – 21, 24 – 30, 62, 64 – 69, 72 – 80, and 82 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. The phrase “a web or fabric by itself” in claim 9 is indefinite. It is unclear if the claim excludes additional layers from being joined to the claimed fabric layer. Is the Applicant claiming that the web or fabric can form a stable web or fabric layer by itself with out needing additional layers to provide reinforcement or support to the fabric layer. Or is the Applicant

Art Unit: 1771

claiming that the fabric is produced to the exclusion of additional layers? Claims 30 and 67 are similarly rejected. Claims 11 – 21, 24 – 29, 62, 64 – 66, 68, 69, 72 – 80 and 82 are rejected due to their dependence on claim 9, 30, or 67.

6. Claim 82 is rejected since it is unclear how the Applicant intends to limit the claimed product. The Applicant recites that the fiber containing material “consists essentially of the multi-component fibers processed by said process.” Is the Applicant stating that the fabric is made from only multi-component fibers which have been produced by a certain process? Is the Applicant claiming that the fabric only consists of multicomponent fibers? If this is the case, it is pointed out that the Applicant is claiming the final product which no longer comprises any multicomponent fibers. Instead the final product comprising individual mono-component filaments bonded together by a binder material located at the intersections of the mono-component filaments. Thus, the use of multicomponent fibers, as opposed to a mixture of monocomponent fibers, would be a process limitation which is not given any patentable weight at this time since the Applicant is claiming the product produced by the process and not the process itself.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 9, 11 – 15, 17 – 21, 24 – 28, 30, 62, 64 – 69, 72 – 80, and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington, Jr. et al. (3,229,008) in view of Understanding Textiles; Fourth Edition (Tortora, Phyliss G. Macmillan Publishing Company, New York, New York. 1992. p 40).

Harrington, Jr. et al. discloses a fibrous web comprising polypropylene fibers bonded together by polyethylene (column 1, lines 12 – 14). The fibrous web can be used as nonwoven fabrics, cigarette filters, and the like (column 1, lines 18 – 20). The polypropylene fibers and polyethylene binder fibers are mixed together and carded to form a consolidated web which is then heated to form a fabric (Figure 2). During the heating step, the polyethylene binder fibers melt and form bonds at the intersections of the polypropylene fibers, as shown in Figure 2 (column 1, lines 67 – 71). Thus, the polyethylene component would be substantially only at the intersection of the polypropylene fibers and would encapsulate the fibers at their intersections. Harrington Jr. et al. discloses that the polyethylene fibers can have a linear density between 1.5 and 200 denier and a melting point of 100°C (column 2, lines 3 – 8). The polypropylene fibers can be high-density or low-density polyethylene and can have a denier which varies from 1.5 to 200 denier (column 2, lines 13 – 18). Additionally, Harrington Jr. et al. discloses that the example fabrics have a basis weight of 1 oz/yd² (Example 1).

Harrington Jr. et al. fails to teach using fibers smaller than 1.5 denier. However, microfibers, or fibers that are less than 1 denier per filament, are known to produce lightweight, soft fabrics, with very fine pores and dense surface. The microfibers are also more flexible which makes the fabric have attractive hand and draping characteristics (Understanding Textiles, page 40). Microfibers also have better barrier and filtration properties and are used in medical and filtration fabrics. Therefore, it would have been obvious to one of ordinary skill in the art to use polypropylene fibers with a denier less than 1 in the fabric taught by Harrington Jr. et al. to produce a fabric which is light weight and soft with attractive draping and hand properties. Further, it would have been obvious to one having ordinary skill in the art at the time the

invention was made to choose the claimed fiber denier, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215.

Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or an obvious variant from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the Applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). Therefore, the prior art needs to teach the final structure of the product produced by the process and not the actual process limitations recited in the claims. Thus, claims 9, 11 – 15, 17 – 21, 24 – 28, 30, 62, 64 – 69, 72 – 80, and 82 are rejected.

9. Claims 9, 11 – 21, 24 – 30, 62, 64 – 69, 72 – 80, and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall (4,083,913).

Marshall discloses an air-laid fibrous web containing a minor portion of short thermoplastic and thermoretractile fibers, or thermosensitive fibers (abstract). When the air-laid web is heated, the thermosensitive are melted to the point that they lose their fiber identity and they form beads or droplets substantially located at the crossover points of the other fibers present in the air-laid web (column 4, lines 62 – 68). Thus, the thermosensitive component would be substantially only at the intersection of the polypropylene fibers and would encapsulate the fibers at their intersections. The thermosensitive fibers are made from a wide variety of

Art Unit: 1771

binder fibers including polyolefin fibers, undrawn polyester fibers, low melt polyamide fibers, and the like (column 7, lines 58 – 65). Polyolefin fibers such as polypropylene have a melting point of 325 to 335°F (see Understanding Textiles, page 216) and polyethylene fibers have a melting point of 230 to 250 °F (see Wellington Sears Handbook of Industrial textiles, page 596). The major portion of the web comprises is a non-thermosensitive fiber, which includes any textile fiber which has a suitable discrepancy between the melting point of the thermosensitive fiber and the non-thermosensitive fiber, for example at least 100°F (column 7, lines 66 – column 8, line 4). The fabric produced in the Examples comprise a non-thermosensitive fiber with a denier of 1.5 and a basis weight of 10, 25, and 35 g/yd², or about 0.35, 0.88, and 1.23 oz/yd² (Examples 1 – 3).

However, Marshall fails to teach using fibers with a linear density other than 1.5 denier. As set forth above, microfibers, or fibers that are less than 1 denier per filament, are known to produce lightweight, soft fabrics, with very fine pores and dense surface. The microfibers are also more flexible which makes the fabric have attractive hand and draping characteristics (Understanding Textiles, page 40). Microfibers also have better barrier and filtration properties and are used in medical and filtration fabrics. Therefore, it would have been obvious to one of ordinary skill in the art to use polypropylene fibers with a denier less than 1 in the fabric taught by Harrington Jr. et al. to produce a fabric which is light weight and soft with attractive draping and hand properties. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a fiber denier less than 1, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or

Art Unit: 1771

workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

Additionally, while Marshall discloses that the non-thermosensitive fiber can be any stable textile fiber with a thermal sensitivity at least 100°F greater than the thermosensitive fiber, Marshall fails to teach using polymer fibers such as polyethylene terephthalate or polyamides. However, it would have been obvious to one having ordinary skill in the art to choose polyethylene terephthalate or polyamide fibers as the non-thermosensitive fiber, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. One of ordinary skill in the art would be motivated to choose readily available and relatively inexpensive textile fibers which have a melting temperature at least 100°F greater than the melting temperature of polyolefin fibers such as polyethylene terephthalate which has a melting point of between 482 and 550°F (see *Understanding Textiles* page 196) or polyamides which have a melting point of about 415°F for nylon 6 and about 482°F for nylon 6,6 (see *Understanding Textiles* page 188). Both polyester and polyamide fibers have a melting point which is 212°F, or 100°C, greater than polyethylene fibers.

And as set forth above, the process limitations recited in the product claims are not given any patentable at this time. The patentability of the product is based on the final structure produced by the process limitations and not the process limitations themselves. Therefore, claims 9, 11 – 21, 24 – 30, 62, 64 – 69, 72 – 80, and 82 are rejected.

Response to Arguments

10. Applicant's arguments with respect to claims 9, 11 – 21, 24 – 30, 62, 64 – 69, 72 – 80, and 82 have been considered but are moot in view of the new grounds of rejection.

Allowable Subject Matter

11. Claim 81 is allowed for the reasons of record.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

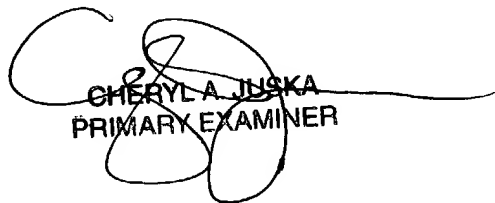
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (571) 272-1472. The examiner can normally be reached on Monday - Friday (8:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1771

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jenna-Leigh Befumo
March 24, 2004


CHERYL A. JUSKA
PRIMARY EXAMINER